

**ABSTRACT**

5        This invention discloses a proportional to absolute temperature  
(PTAT) type of temperature measurement to improve the accuracy of  
temperature measurements. Instead of measuring resistance variations  
across a distance of diode, a technique of temperature determination using  
frequency measurements is performed in this invention through a voltage  
control oscillator. The measurement circuits are more compatible with the  
use of a flexible PCA connection to the microdisplay to a board. The basic  
10       circuit of this invention achieved an improved resistance noise and  
provides additional operation modes with added benefits of more  
conveniently and flexibly determining an operation mode to overcome the  
measurement noises. Furthermore, measurement of frequency as carried  
out by this invention improves the measurement accuracy and reduces the  
15       likelihood of false temperature readings.